FILE NOTATIONS

Entered in NID File	✓	Checked by Chief	P.W.B.
Location Map Pinned	✓	Approval Letter	
Card Indexed	✓	Disapproval Letter	

COMPLETION DATA:

Date Well Completed 8-31-74 — Location Inspected

WW..... WW..... TA..... ✓ — Bond released

GW..... OS..... PA..... — State or Fee Land

LOGS FILED

Driller's Log..... ✓

Electric Logs (No.) ..... ✓

E..... I..... Dual I Lat..... GR-N..... Micro.....

BHC Sonic GR..... Lat..... MLL..... Sonic.....

CBLog..... CCLog..... Others.....

THE ANSCHUTZ CORPORATION

1110 DENVER CLUB BUILDING
518 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303—573-5665

June 11, 1974

Mr. Gerald Daniels
U. S. Geological Survey
8426 Federal Bldg.
Salt Lake City, Utah 84138

Mr. Marvin Jensen
U. S. Bureau of Land Management
446 South Main Street
Moab, Utah 84931

Mr. Cleon B. Feight
Utah Division of Oil & Gas Conservation
1588 West North Temple
Salt Lake City, Utah 84116

Re: Anschutz #1 Federal 614
SE SW Sec. 3-17S-21E
Grand County, Utah
Federal Lease U-9614

Gentlemen:

Transmitted herewith in triplicate is the APPLICATION FOR PERMIT TO DRILL (Form 9-331C) for the captioned well with the required attachments.

Yours very truly,

THE ANSCHUTZ CORPORATION

W. W. Wakefield
Vice President

WWW:kcw
Enclosure

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL
OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
The Anschutz Corporation

3. ADDRESS OF OPERATOR
1110 Denver Club Bldg., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
SE SW¼ Sec. 3 **698' WSL** **2034' WWL** 1 mile East of Book Cliff Natural Gas Pool
At proposed prod. zone
NE SE SW

5. LEASE DESIGNATION AND SERIAL NO.
Federal U-9614

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Federal 6%

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
3-17S-21E

12. COUNTY OR PARISH
Grand

13. STATE
Utah

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
Thirty miles west-northwest of Harley Dome, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
698'

16. NO. OF ACRES IN LEASE
1076

17. NO. OF ACRES ASSIGNED TO THIS WELL
---

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
-----

19. PROPOSED DEPTH
10,700'

20. ROTARY OR CABLE TOOLS
rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
8216 KB **8205 GL**
Mean Ridge Sfc.

22. APPROX. DATE WORK WILL START*
6-28-74

23. PROPOSED CASING AND CEMENTING PROGRAM*

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	9 5/8"	36	300	275 sx (circulated)
8 3/4"	7"	20	6200	100 sx
6 1/8"	4 1/2"		10,700	100 sx

We propose to drill this well to an approximate total depth of 10,700 in the Entrada formation. After setting surface casing, hole will be drilled w/mist or mud through the Castlegate sand; intermediate casing will be set at that depth, and the hole will be drilled w/air-mist to total depth. Electric logs will be run to total depth; no cores are planned. Open hole flow tests or conventional drill stem tests will be run as warranted. If production is obtained, casing will be set through the pay section and selectively perforated; fracing or acidizing may be necessary to stimulate production.

Attachments: Survey plat
7 point above ground safety equipment letter
12 point environmental impact letter
Designation of operator executed by Midwest Oil Corp., lessee of record, in favor of Anschutz Corporation, Operator.

☆ Check for spacing

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED W. V. Mansfield TITLE Vice President DATE 5-6-74

(This space for Federal or State office use)

PERMIT NO. 43-019-30204 APPROVAL DATE

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Form 9-1123
(Rev. Dec. 1957)

(Submit in triplicate to appropriate
Regional Oil and Gas or Mining Supervisor)

L-16734
627586

DESIGNATION OF OPERATOR

The undersigned is, on the records of the Bureau of Land Management, holder of lease

DISTRICT LAND OFFICE: Salt Lake City, Utah
SERIAL NO.: U. S. Utah 9614

and hereby designates

NAME: The Anschutz Corporation
ADDRESS: 1110 Denver Club Building
Denver, Colorado 80202

as his operator and local agent, with full authority to act in his behalf in complying with the terms of the lease and regulations applicable thereto and on whom the supervisor or his representative may serve written or oral instructions in securing compliance with the Operating Regulations with respect to (describe acreage to which this designation is applicable):

Township 17 South, Range 21 East, S.L.M.
Section 3: W/2

It is understood that this designation of operator does not relieve the lessee of responsibility for compliance with the terms of the lease and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated operator, the lessee will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his representative.

The lessee agrees promptly to notify the supervisor of any change in the designated operator.

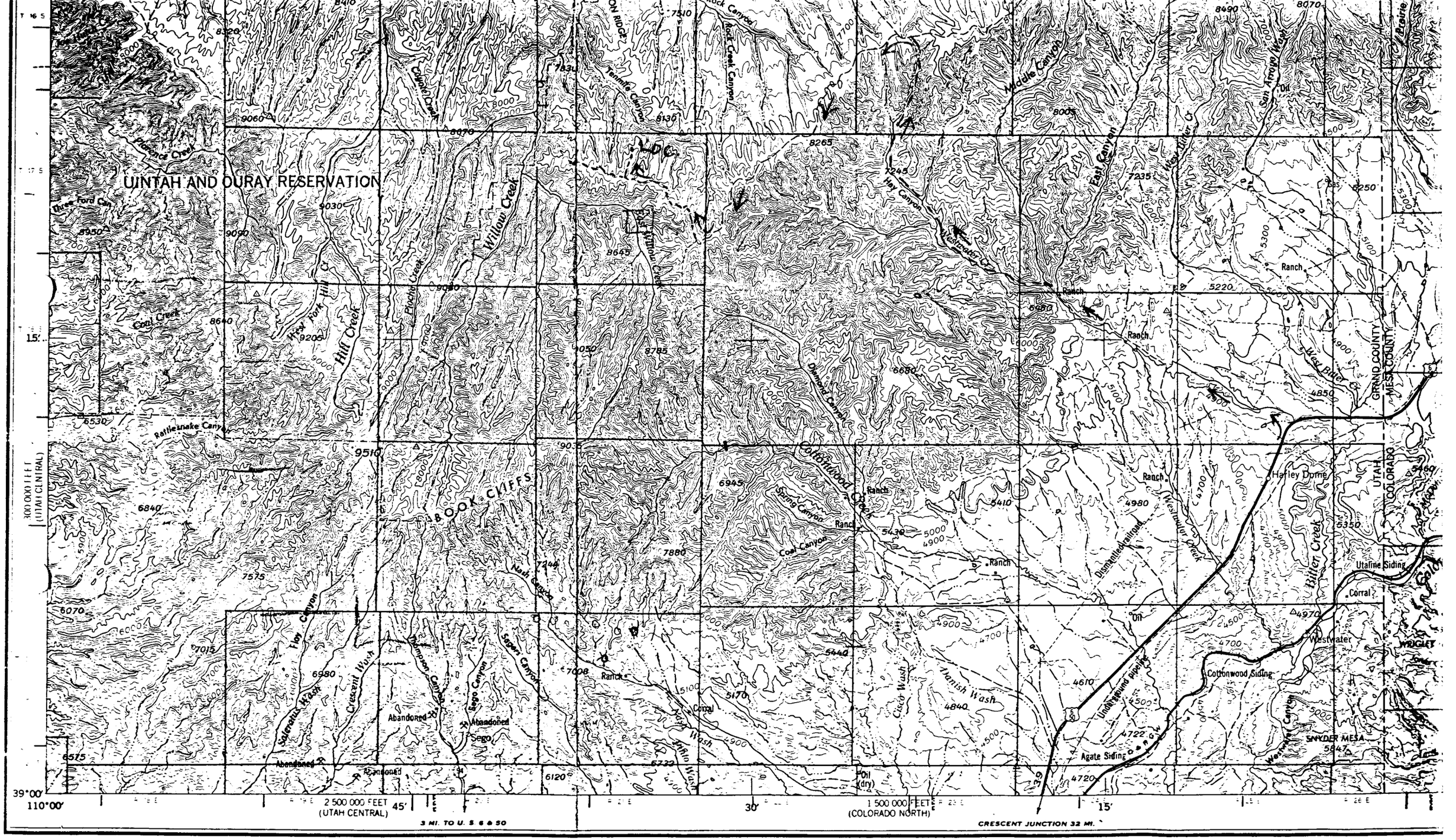
AMOCO PRODUCTION COMPANY

By: [signature] BTF
(Signature of lessee) Its Attorney in Fact

Security Life Building
Denver, Colorado 80202
(Address)

June 11, 1974
(Date)

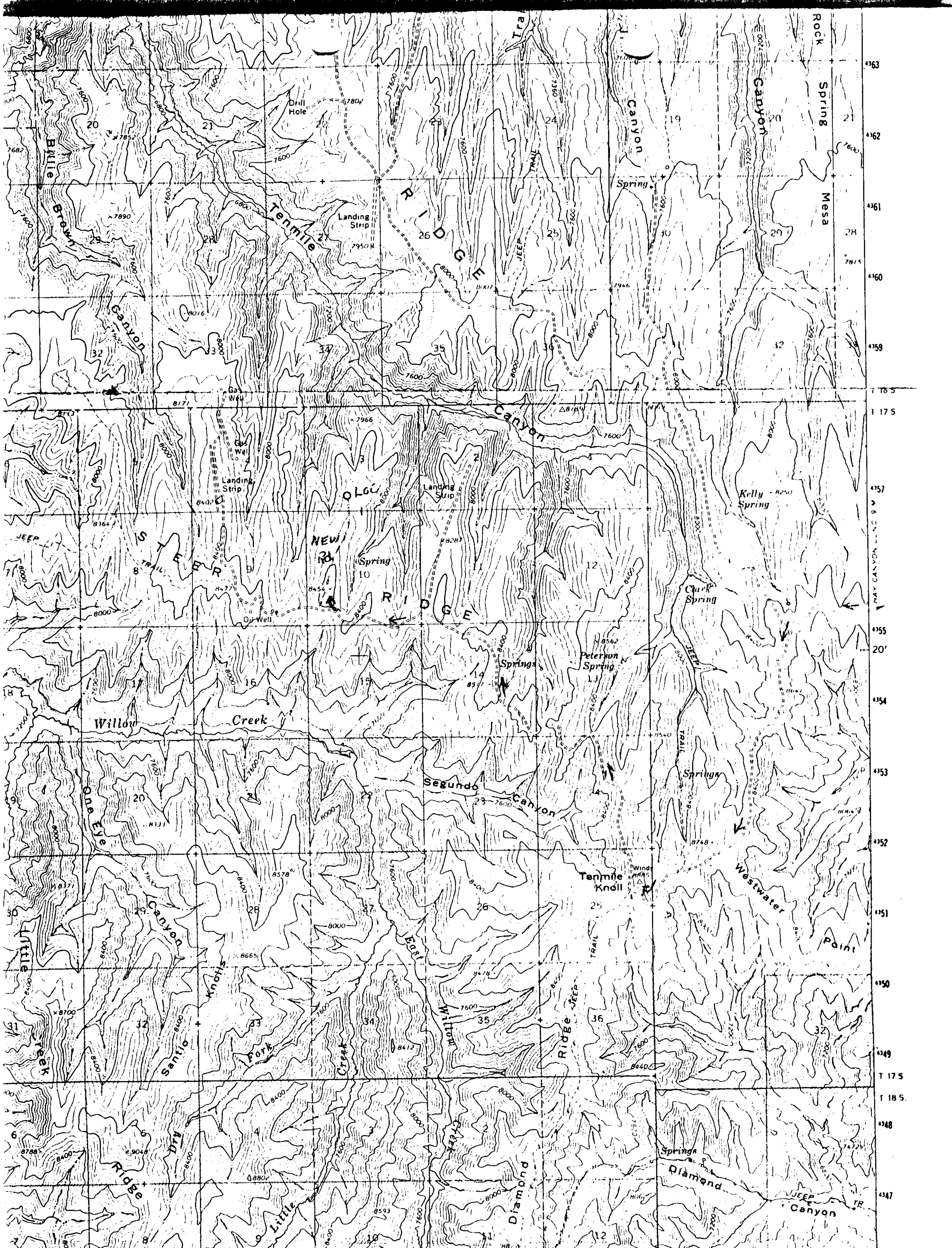
U. S. GOVERNMENT PRINTING OFFICE 16—53606-3



LEGEND
ROAD DATA 1956

MAP NO. 1

Prepared by the Army Map Service (AOSX) Corps of Engineers U. S. Army



SCALE 1:62500

1 2 3 4 MILES

6000 9000 12000 15000 18000 21000 FEET

5 KILOMETERS

CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 40-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

UTAH

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Unimproved dirt ...

MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
...LOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
...BING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TENMILE CANYON, UTAH
N3915—W10930/15

1963

AMS 4062 I—SERIES V797

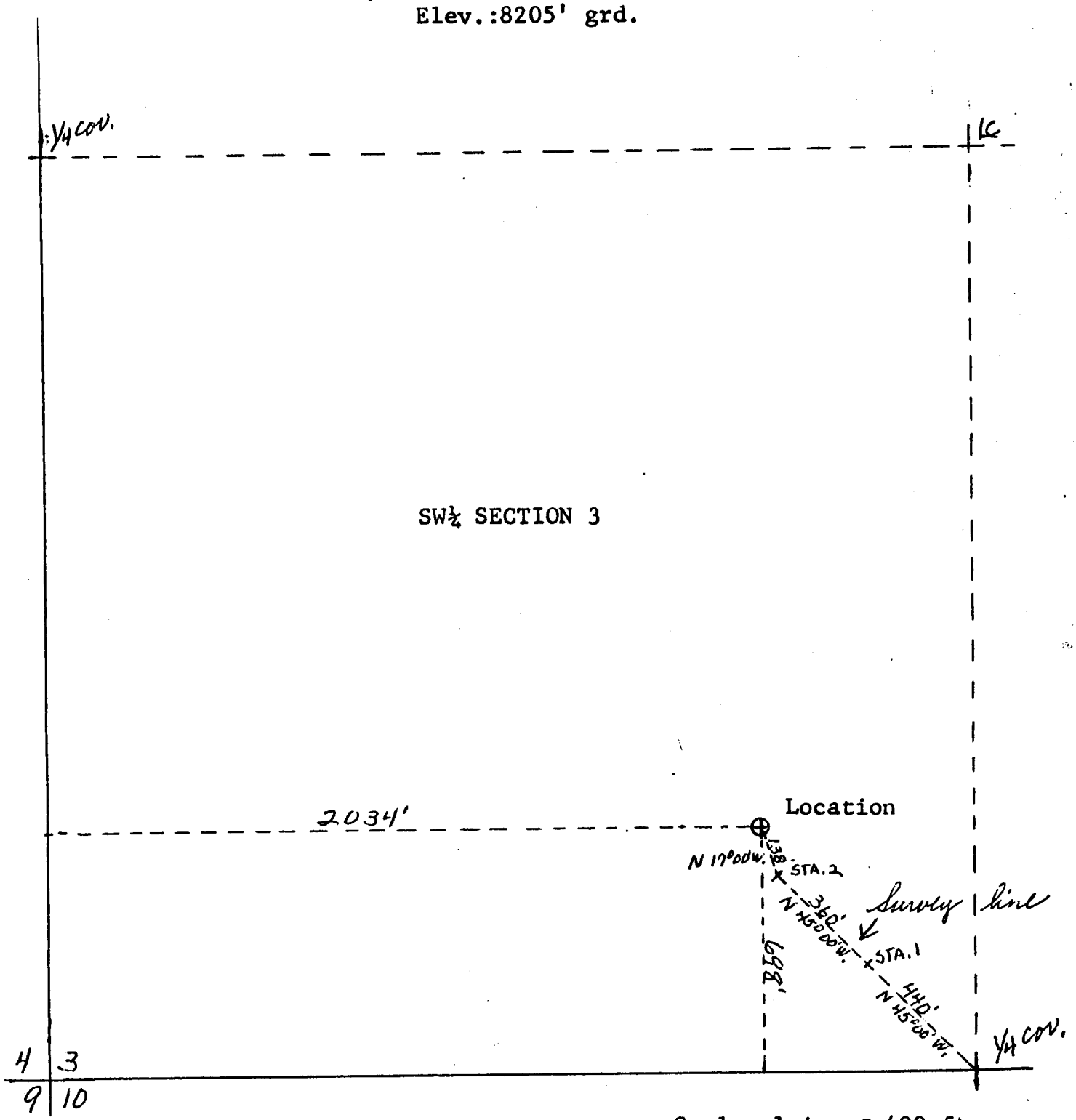
MAP NO.2

LOCATION PLANS FOR
ANSCHUTZ #1 FED. 614 WELL
SE.SW.SEC.3-17S-21E.
GRAND COUNTY,UTAH

1. A survey plat (Plat No.1) is attached showing the location of the proposed well site. Map No.1 shows the route to the well site from Hwy.50-6 (I-70).
2. Map No.2 shows the access road to the well site from present roads. The road will be built along the top of the ridge and along a trail which was made previously by stockmen. This map also shows all the other secondary roads in the area. The proposed road has been flagged on the ground.
3. All present wells and dry holes in the area around the proposed well site are shown on Map No.2.
4. See 1 and 2 above.
5. A plan for the location of production equipment at the well site, if the well is successful, is shown on Plat No.2. If oil, a pump jack, heater-treater, tank battery, and flow lines will be installed. If gas, a dehydrator, flow lines, and fluid tank will be installed. This is a wildcat well, but there is a gas line along the ridge road that connects with the Segundo #2 well in Section 33, T.16 S.,R.21 E. This line comes to the well from the Moon Ridge No.1 well to the north and is laid across Tenmile Canyon. The Segundo No.2 well is about 1½ miles northwest of the subject well site.
6. Water for drilling purposes can usually be obtained from springs at the heads of most of the canyons in the area. There is a spring at the head of the canyon in Section 10 (see Map No.2), which should provide sufficient water for the drilling operations. This is only about 1½ miles from the drill site, and the water will be hauled to the rig by truck.
7. A plat showing the plan for the placement of the drilling equipment to be used in the drilling operations of the proposed well is shown on Plat No.3. This plat shows the reserve pit and garbage-burn pit. Excess drilling mud, waste water, and air cuttings will be deposited in the reserve pit during the drilling operations. The garbage and burnable material will be put into the burn pit. At the completion of the well these pits will be folded-in and levelled.
8. See location of house trailers on Plat No.3.
9. There are two air strips in the surrounding area which were built and used during the drilling of the Segundo wells. One is in Section 2 and the other is in Section 4, on either side of the proposed well site. One or the other of these air strips will be used during the drilling of the proposed well.

10. See Plat No.3 for the drilling equipment layout.
11. There is little top soil on top of the rocks at the proposed well site. Sage and other brush covers the area. There are a few juniper and cedar trees, but only a few of these will have to be cleared from the drill site. After the well is completed and abandoned, if dry, the well site will be cleaned and levelled; and the pits will be covered. Seeding will be done if required.
12. As can be readily seen by the topography shown on Map No.2, the the area is rugged and has steep cliffs and deep narrow canyons. Access is permitted only by following along the tops of the ridges. Road construction is not difficult and usually entails the removal of the brush. Little or no rock work is required. Sandstone and shales belonging to the Green River formation are present and exposed along the canyon walls. No known mineralization or commercial deposits of industrial minerals are present in the area. The area is primarily used by stockmen for grazing purposes.

LOCATION PLAT FOR
ANSCHUTZ #1 FED.614 WELL
SE.SW.SEC.3-17S-21E.
GRAND COUNTY,UTAH
(2034'fr.W-line & 698'fr.S-line)
Elev.:8205' grd.



Scale: 1 in. = 400 ft.
Date: May 28, 1974
Surveyed by: W. Don Quigley

PLAT NO. 1

WELL CONTROL EQUIPMENT FOR
ANSCHUTZ #1 FED. 614
SE.SW.SEC.3-17S-21E.
GRAND COUNTY,UTAH

The following control equipment is planned for the above designated well:

1. Surface Casing:
   A. Hole size for surface casing is 12¼".
   B. Setting depth for surface casing is approximately 300'.
   C. Casing specs.are: 9 5/8", J-55, 36.00#, 8 rd. thread, new.
   D. Anticipated pressure at setting depth is approx. 60#.
   E. Casing will be run and cemented with 75 sks of cement with returns to the surface.
   F. Top of casing will be just above ground level.
2. Casing Head:
   Flange size: 10"; A.P.I. pressure rating: 3000#; Series 900; Cameron or equivalent; new or used; equipped w/ two 2" ports with nipples and 2", 3000# W.P. valves. Casing head and 2" valves set above ground.
3. Intermediate Casing:
   A. Hole size below surface casing is 8 3/4".
   B. Setting depth for intermediate casing is approx.5850' (Casing will be set thru the Castlegate sand to shut off the upper water zones.)
   C. Casing specs. are: 7", J-55, 20.00#; 8 rd. thread, used.
   D. Anticipated pressure at setting depth is approx.2000#.
   E. Casing will be run and cemented with 95 sks. of cement, and at least 12 hrs. will elapse before drilling recommenced.
   F. Casing will be set in 7" slips in casing head, with a tension of not less than 15,000# set on slips.
   G. Air-mist drilling will be employed down to the point of setting the intermediate casing and then the casing will be blown dry and drilling will continue using air as a circulating medium.
4. Blowout Preventers:
   A. Double rams; hydraulic; one set of blind rams; one set of rams for 3½" or 4" drill pipe; 10"; 3000# W.P.; Series 900; equipped with mechanical wheels and rods for back-up; set on top of casing head flange and securely bolted down and pressure tested for leaks up to 3000#; Cameron, Shaffer, or equivalent.

B. Rotating Head: 10"; set on top of blowout preventer and bolted securely; complete with kelly drive, pressure lubricator, 3½" or 4" stripper rubber for 3000# W.P.; Shaffer or equivalent.

C. The fill and kill lines(2") are to be connected thru the 2" valves on the casing head.

5. Auxillary Equipment:
A float valve (3000# W.P.) is to be used in the bottom drill collar at all times. A string-float will also be used in the drill pipe and kept within 200'-300' of the surface.

6. Anticipated Pressures:
The shut-in pressures of the Dakota, Cedar Mountain, Morrison, and Entrada sands at depths of 9800', 9900', 10,000', and 10,600' respectively should be about 2100#, 2150#, 2200#, and 2500# (respectively) in the area.

7. Drilling Fluids:
Air and/or air-mist with soap and water will be used as drilling media for subject well. In the event of hole trouble, it may be necessary to convert to mud.

8. Production Casing:

A. Hole size for production casing is 6 1/8".

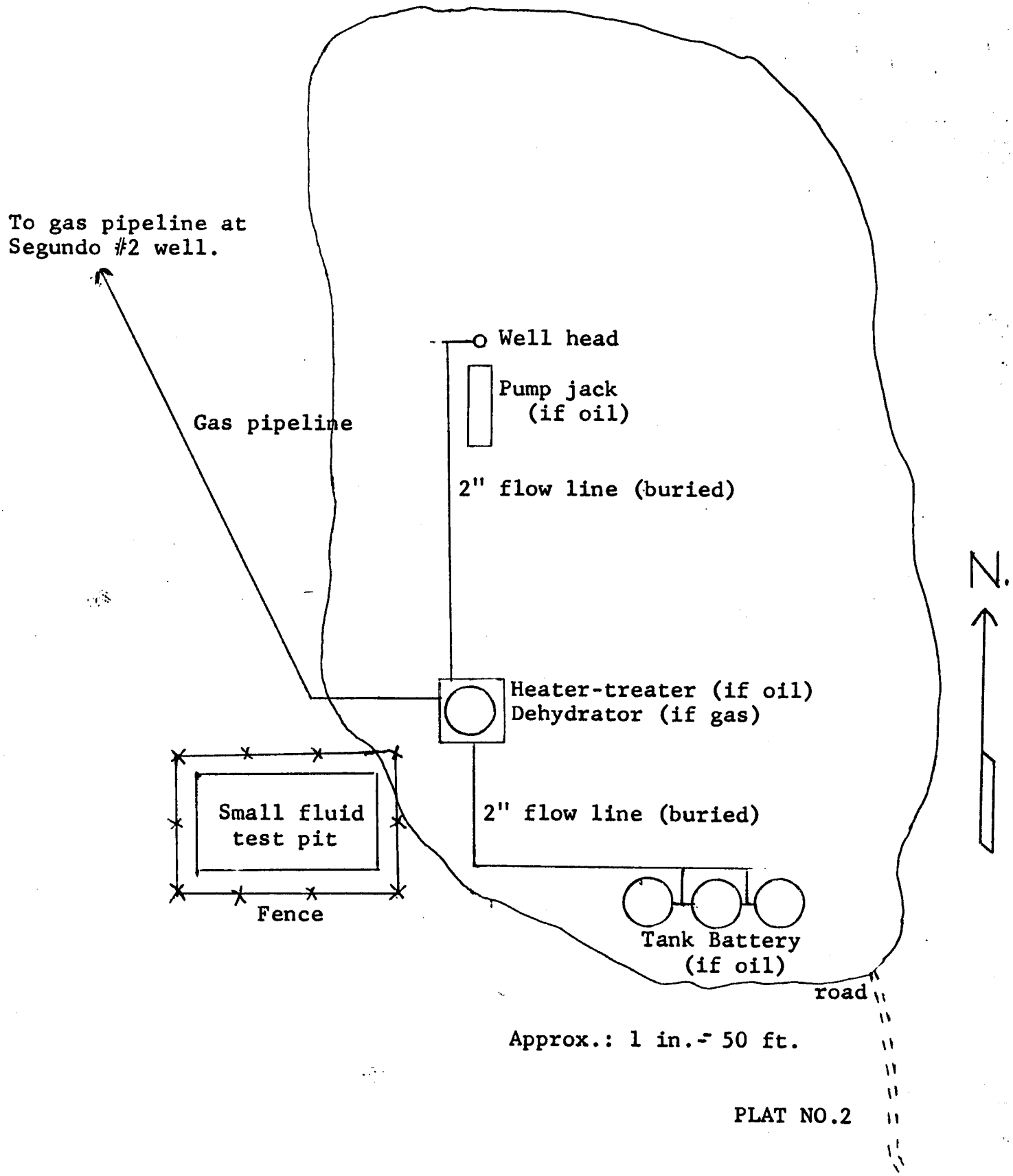
B. Approx. setting depth: Casing will probably be set about 100' into the Entrada formation, the top of which is expected at about 10,600'.

C. Casing specs.: 4½", J-55; 10.50#, 8 rd. thread, new or used.

D. Casing will be run and cemented with 100 sks of cement - sufficient to bring the cement top at least 100' above the top of the Dakota formation. The cement will be allowed to cure for at least 36 hrs. The 4½" casing will be set on 4½" slips inside a series 900 spool set on the previous casing head flange, and cut off. The tubing head, 10" to 2 3/8", series 900, 3000# W.P., will be installed on top of the spool and bolted down securely. The 2" ports in the side of the tubing head will be equipped with high pressure nipples and 2", 3000# W.P. valves. The production zones will then be perforated thru a master valve and lubricator.

E. Tubing, 2 3/8" O.D., upset, J-55, 4.70#, new, will then be run, set in the tubing head and flanged down, and the well can then be swabbed-in. If an oil well, the rods and pump can then be run and connected to the pump jack.

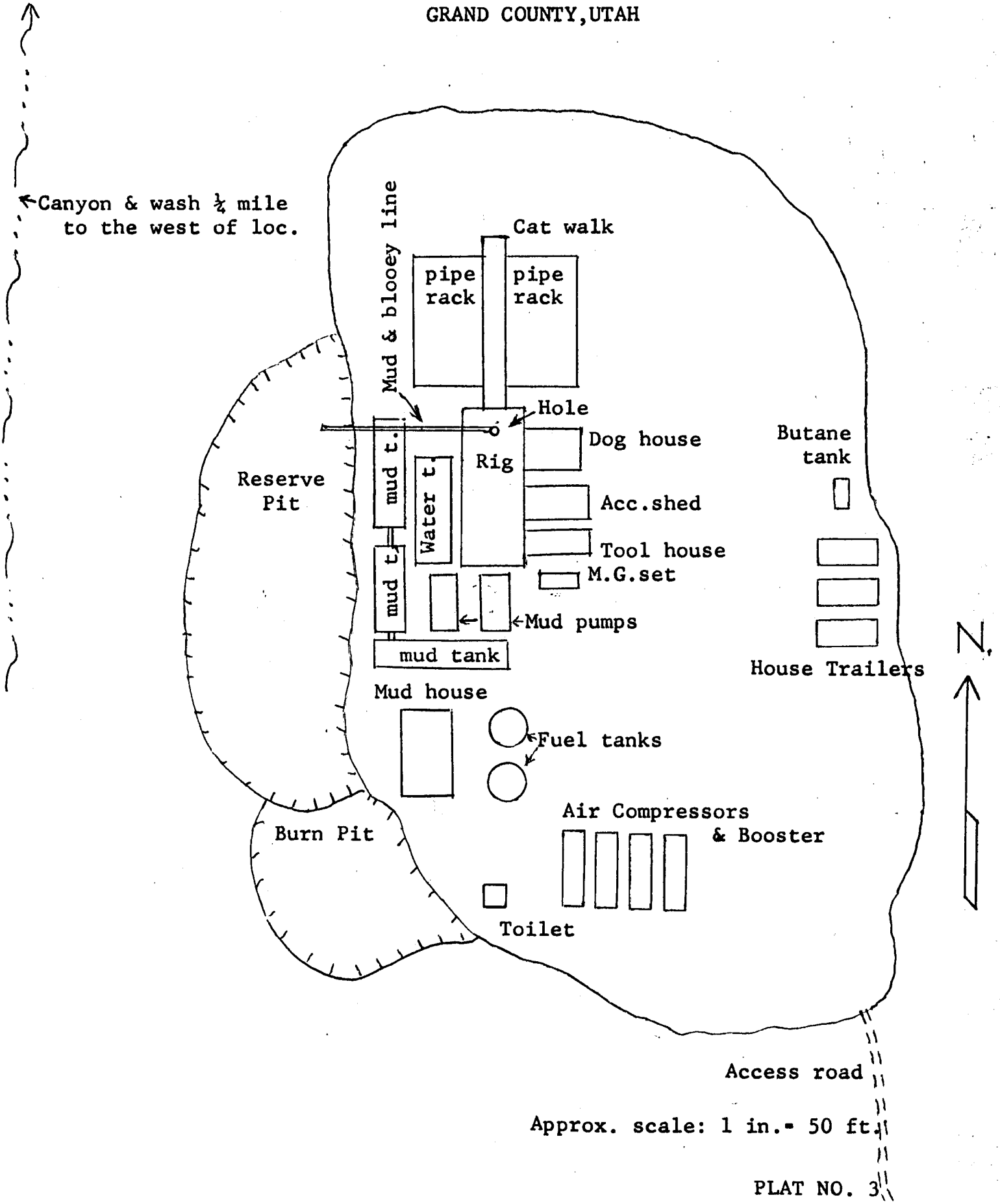
PLAN FOR PRODUCTION EQUIPMENT
ANSCHUTZ #1 FED. 614
SE.SW.SEC.3-17S-21E.
GRAND COUNTY, UTAH



Approx.: 1 in. = 50 ft.

PLAT NO.2

DRILLING EQUIPMENT LAYOUT
FOR
ANSCHUTZ #1 FED.614
SE.SW.SEC.3-17S-21E
GRAND COUNTY,UTAH



Approx. scale: 1 in.= 50 ft.

PLAT NO. 3

June 17, 1974

The Anschutz Corporation
1110 Denver Club Building
Denver, Colorado 80202

Re: Well No. Federal 614 - #1
Sec. 3, T. 17 S, R. 21 E,
Grand County, Utah

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to wells is hereby granted in accordance with the General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

PAUL W. BURCHELL - Chief Petroleum Engineer
HOME: 277-2890
OFFICE: 328-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling. Your cooperation relative to the above will be greatly appreciated

The API number assigned to this well is 43-019-30204.

Very truly yours,

DIVISION OF OIL & GAS CONSERVATION

CLEON B. FEIGHT
DIRECTOR

CBF:sw
cc: U.S. Geological Survey

[illegible]

JOHN C. KEPHART & CO.
GRAND JUNCTION LABORATORIES
435 NORTH AVENUE ◆ PHONE 242-7618 ◆ GRAND JUNCTION, COLORADO 81501

ANALYTICAL REPORT

Received from: Anschutz Oil Co.

Customer No. Well Fed. 614-1 **Laboratory No.** 716 **Sample** Water

Date Received July 25,1974 **Date Reported** July 29,1974

Sample	Well Fed. 614-1	Drilling at [illegible]
Sodium(Na)	175 mg/L	7.609 me/L
Calcium(Ca)	14.2 " "	0.7085 " "
Magnesium(Mg)	2.4 " "	0.1974 " "
Chloride(Cl)	172 " "	4.8504 " "
Sulfate(SO_4)	84.8 " "	1.7655 " "
Carbonate(CO_3)	12.0 " "	0.3996 " "
BiCarbonate(HCO_3)	92.8 " "	1.521 " "
Iron(Fe)	0.07 " "	
Total Dissolved Solids	576 " "	
Solids After Ignition	530 " "	
Specific Gravity 60-70°F	1.003	
Resistivity 68°F Ohms-Meter	15.20	
Ph	8.6	

Contains about [illegible]

31

By J. Kephart

Analysis, Water

JOHN C. KEPHART & CO.

GRAND JUNCTION LABORATORIES

435 NORTH AVENUE • PHONE 242-7618 • GRAND JUNCTION, COLORADO 81501

ANALYTICAL REPORT

Received from: Anschutz Corp.

Customer No. DST #3 **Laboratory No.** 922 **Sample** Water

Date Received August 15,1974 **Date Reported** August 16,1974

Sample	DST #3 Bottom Sample Interval 2070-2110	
Sodium(Na)	610 mg/L	26.52 me/L
Calcium(Ca)	2.0 "	0.099 "
Magnesium(Mg)	1.0 "	0.082 "
Chloride(Cl)	253 "	7.13 "
Sulfate(SO_4)	390 "	8.11 "
Carbonate(CO_3)	0.00	0.00
BiCarbonate(HCO_3)	13.96 mg/L	0.22 me/L
Potassium(K)	36 "	0.92 "
Total Dissolved Solids	2750 "	
Solids After Ignition	1400 "	
Specific Gravity60/70°F	1.002	
Resistivity 68°F	3.65 Ohms-Meter	
Ph	8.7	

cc: Mon Power
P T S
Kerr McGee
WWW, RMW, ARH

By Kephart

KB 8216 — ANSCHUTZ #1 FEDERAL 614 — 0-500

Depth		Lith	Description
0		ss/sub	f gr, buff to yel-ochre, argil, slty, calcar; i/p w/ thin ls streaks
		sltst	grnsh/gy to tn, argil, calcar, sli carbonaceous; gy, calc fissile sh
	py	sh	gy/grn, slty, calcar w/ fossil frags; pyritic; i/p gy & lt brn bnd
			i/p gy/tn, mod micaceous; i/p silty, ochre
50			thin ss laminae - yel/gy, f-med gr, sub-rd, sli congl, fair sorting, calc
			from 60, med gy color; sim yel limonite staining
			i/p grades to silt
			from 90 - i/p brn color - i/p gy, tn, lt brn color
100			
150			from 155, val lge fossil frags - ostracod?
			grds to argil ls - is fissile, faint brn mottling
		ls	brn, micritic, argil - grades to shale below
		sh	ash gy, calcar, sli micac, w/ foss frags, incrsly pyritic
200	py		i/p variegated gy, tn & brn; silty
			i/p brn sh
		sltst	buff to yel/ochre, v argil
250		sh	interbdd gy & brn; gy is silty, brn more calcar
			bcms gy/grn, abnd pyrite & foss frags
			@ 265 - 1½' mahogany oil shale - no cut, no fluor w/ chlorothene
			from 270 varies from gy to gy/tn - then fr 275-310 is dom
			choc brn, v calcar
300			
			fr 330, oil shale & v fine f-med gr, sli glauc sth sub-ang ss
			base is buff, slty, micac, clayey sh
350		ss	buff, a/a; i/p gy, slty, micac, calcar
		sh	dom gy, sli silty, calcar; i/p buff; i/p grnsh/gy sli silty;
			bcm lt brn & mahogany, vf laminated
400			bcm lt tn; tr buff ss; tr lt tn, micritic ls
			bcm sdy @ base
	cu	ss	lt olive drab, f gr, v argil, congl, tr to abndt pyrite, one ctg w/ native copper
450	py		lt tn, gy/tn, o.d. shale
			ss grades to sltst i/p
	py	sh	od, tn, gy/tn calcar
500			

K+E 5 X 5 TO ½ INCH 7 X 10 INCHES 46 0863 MADE IN U.S.A. KEUFFEL & ESSER CO.

KB 8216 ANSCHUTZ #1 FEDERAL 614

500
sh a/a

600
py sltst dk grn & gy/grn, argil, micac, foss; v/p off wh w/ thin py sms
agglomeritic f s & calc grns w/ pyrite xls & gr; gradational
py sh gy/grn, slty, micac, carbonaceous (v/p foss frags) sl calcar,
w/ dissem py;
interbdd sltst

700
from 660 brn wh to crm spotted, non-calcar
v/p brn w/ spots a/a; from 730 v/p crm to off wh color
incrsg up to 50% of spl
from 760 v/p choc brn

800
tr wh ss & sltst
py ss lt gy, f gr, v friable, sl conql, sub-ang to sub-rd, variable py
sh gy/grn & choc brn spotted a/a
sltst gy/grn, argil - same as ss a/a except for gr size

900
ls oolitic to pisolitic - v/p agglomerate of spherulites
sh a/a
py sltst a/a
py ss a/a brn
sltst a/a

1000
py sh a/a
py ss a/a
py sh a/a dom gy/grn @ top then dom brn from 1040

1100
ss a/a, friable, v/p v micaceous
sh a/a brn, spotted
sltst a/a
ss a/a
sh a/a; tr crm ool ls

1200
sltst gy/grn a/a
ls/ss ash gy ss; ash gy to lt gy/tn spherulitic ls, v/p agglom of spherul
sh gy/grn & brn a/a
ss a/a grades to sltst
sh bl/gy & gy spotted a/a to 1270 then dom brn/spotted a/a
gy/grn & brn coloring is v/p variegated - not indigenous to
a single stratum

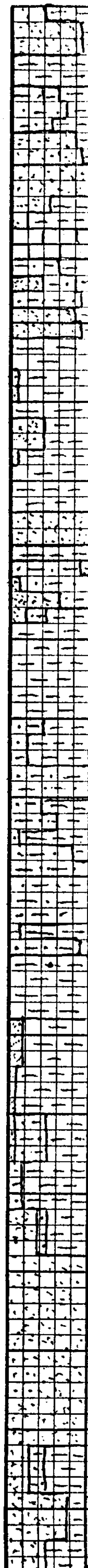
1300
sltst a/a
sh a/a
ss bl/gy to gray, congl, etc a/a
sh gy/grn & brn/spotted a/a

1400
sltst gy a/a, grds to ss
sh a/a
ss a/a, mostly friable, but v/p well cemented

1500
sptd sh a/a

K+E 5 X 5 TO ½ INCH 7 X 10 INCHES 46 0863 KEUFFEL & ESSER CO. MADE IN U.S.A.

KB 8216 ANSCHUTZ #1 FEDERAL-C'4 1500-2500



Depth	Lith.	Description
1500	ss	a/a, interbdd gy/grn sh
	sh	a/a, dom gy/grn sptd, v/p brn sptd
	sltst	gy, argil, v/p w/ carbonaceous strks & stride (foss frags)
1600	ss	f gr, slty, congl, etc a/a, v/p bl/gy & tn sh
	sh	grn, tn, lt brn slty; v/p pyritic, v/p fissile
	ls	spherulitic, argil, buff to creamy tan
	sltst (sh, ss)	gy/grn slty sh a/a in gy argil sltst which grades to ss
1700	ss	f gr congl ark a/a
	sh (sltst, ss)	cocoa brn crm spotted non-calcar, v/p clayey, v/p competent; v/p gy/grn but brn color dominates; v/p competent but mslty grnls to f gr size
1800		
	ss	gy, f-mod gr congl, ark a/a, friable
	sh	a/a
	sltst	a/a
	ss	a/a
1900	sh	a/a dom cocoa color, sli variegated w/ wh & yellow; sli calcar to mod calcar; carries free sub-ang to sub-rd qtz gr of f to med size
	(sltst)	bcm incr slty; v/p contains interstratified gy sltst @1970-80; yel, buff, lt brn v/p spotted sh
2000	sltst	sdy, gy; v/p friable; grades to f gr SS
	sh	gy, gy tn, lt brn spotted sh; bcm sdy v/p
	sltst	gy, sdy, sh congl
2100	sltst	Sh; a/a
	sh	cocoa brn; rdsh brn; v/p variegated w/ gy/grn, yel fissile brittle, v/p gy/tn
		ss & sltst gradational
2200		
		sh smwht softer; free sand gr
2300	ss	a/a, ash gy, f gr, sli congl w/ dk gr; v/p v sli por, med hd bcm more fria; from 2350 completely friable
2400		
	sh	dom rd/brn a/a, v/p grnsh/gy calcar slty sh
	ss	ash gy to off-wh completely friable a/a
2500	sh	

2500 - 3500

KB 8216 ANSCHUTZ #1 FEDERAL-G'1

Depth	Lith	Description
2500	Sh	mixed rd/brn, gy/tn, grnsh gy; v/p varig to mottled
2600		
		sltst is tn to gy/tn v calcar & argil
	ss	a/a, sli friable
2700	sltst	a/a
	Sh	a/a, 50-50 rd/brn & grnsh gy
		v/p tn v silty calcar
	sltst	lt gy/tn, v argil, sli sandy
2800		
	sh	dom rd/brn; ss a/a fria
2900		ss mstly fria
		lge cuttings; ss med hd, v sli fria
3000		
		sh v/p v soft rd/brn
3100	sltst	gy, a/a
	sh	
	sltst	
3200	sh	
		ss mstly vf-fine gr
		sh 50-50 rd/brn & grnsh gy, v/p mottled to varig
3300	color change	more gy, grnsh gy; less rd/brn
	sltst	gy, v argil; v/p grds to ss
3400		
	sh	dom dk gy/brn w/ slatey cleavage
3500	sltst	gy to ash gy, v argil

KB 8216

ANSCHUTZ #1 FEDERAL-61

3500			sh dcm rd/brn
			quicks to slty sh; sh v/p tn, c-m, lt gy
3600		sh	gy, dy/tn, grnsh gy, v calcar; v/p rd/brn dcm dom dk gy grds to gy/tn
	py	sltst	ash gy, sandy, pyritic
3700	py	ss	ash gy, f gr, slty, arg.l v/p f-m gr, pyritic
	py	sltst	ash gy a/a pyritic
3800	py	sh	grnsh gy, rd/brn varvg
	py	ss	a/a, ash gy, slt congl, pyritic
3900	qtz	sh	grnsh/gy, v/p fn, v/p rd/brn varvg
	andsite		quartzite, qtzitic ss, qtz, andesite chags
	py		abnd py in ss
			sh dcm v/p dk brn to blk
		ss	ash gy, slty grding to sltst; dk gy/brn sh
4000		sh	med to dk gy to dk gy/brn, slty
		ss	ash gy a/a
4100		sh	gy/blk a/a; v/p carbonaceous stks & laminae; v/p ss, slty
			ss sli qtzitic
			incr ss, slty; v/p rd/brn varvg
4200		ss	ash gy; a/a
			v slty v/p
4300			
4400		sh	dk gy/tn, slty, v/p rd/brn, v/p dk gy to blk
		sltst	ash gy, gy/tn, arg.l
4500			

4500 - 5500

KB 8216

ANSCHUTZ #1 FEDERAL-614

4500		slst	
		ss	ash gy a/a
4600		sh	dk gy/brn, v/p grnsh gy
		ss	ash gy, sli carbl, slty a/a
4700			
4800		sh	a/a
		ss	a/a, sl shny carbonaceous film on partings (looks black coated)
	bitum	sh	a/a; v/p dk brn w/ bituminous streaks
4900			brn-dom dk gy/brn; v/p grnsh gy
			ss grds to slst
		ss	ash gy a/a, v/p w/ carbon laminae
5000		sh	gy, slty, black surface coating v/p
	qtzitic	ss	ash gy a/a; v/p sli qtzitic
5100			
			sli incr in dk brn sh over dk gy/brn
5200			ss incr slty
		sh	dom brnsh/gy, v slty
			brn gy/brn, fossilif, mod hd, v/p w/ waxy luster, v/p slty
5300			ss is ash gy, f gr, v/p foss, poorly srtd, grds to slst, arg il
			brn v slty, v/p v f laminated, fissile
		ss	ash gy a/a, blk & brn spotted
5400			ss & sh interlaminated v/p
			v/p ss grds to mod gy slst
	Kbt	sh	gy/brn & grnsh gy, w/ v/p rd/brn
5500			

5500-6500

KB 8216

ANSCHUTZ #1 FEDERAL-G1A

5500 — sh — a/a

5600

ss — lt gy to ash gy a/a; slty matrix, non-por, non-friable, but w/ sub-platy frac or ptg; sli congl

5700 — coal — bcm sli coarser, w/ sli por; tr coal

5800 — sli more fria; tr free gr

coal — sh — dk gy, grnsh/gy, i/p w/ slatey ptg, tr coal

5900 — sltst — gy to gy/tn, argil; i/p sdy

coal — sh — dk gy to dk gy/brn w/ slatey frac; i/p w/ coal seamlets
i/p gy/grn; tr sli bentonitic grn sh

6000 — micac — dom gy/brn, i/p grnsh/gy; i/p v f micaceous
i/p congl; ss dk is calcar w/ calc xls

tr lt gy/tn waxy luster sh w/ lge mica scales

6100 — qtz — tr qtz gr

color change @ 6130 dk gy/brn, appears black when washed; vf micaceous, calcar; make vf dust
has sli gritty feel but rubs to powder

6200 — @ 6190 color chge affected by mixture of dk gy & buff sh gives olive drab color
i/p pulverulent

6300

6400

6500

6500 - 7500

KB8216 ANSCHUTZ #1 FEDERAL - 6-1

6500

6600

6700

6800

slfst — sub-ang to sub-rd, sli frosted qtz; fair sorting, ranges up to vf ss; completely cmtd; with color

sh — thn silt; sh a/a

6900

7000

7100

7200

7300

sli color change - incr blk

7400

7500

7500 - 8500

KB 8216

ANSCHUTZ #1 FEDERAL-G1

7500

7600

7700

7800

7900

8000

8100

8200

8300

8400

8500

sh a/a

dom blk - lgr cuttings

blk & buff a/a

tr sh

sli lgr ctgs

8500 - 9500

KB 8216

ANSCHUTZ #1 FEDERAL - 614

8500

sh a/a

8600

5% buff sh

diminishing buff

8700

8800

8900

sli more olive-drab color

9000

9100

sli darker - olive/gray color
olive-drab

sli dkr o.d.

9200

dom dk gy - looks black megascopically
sm frac calcite vns

calc

9300

v/p o.d.

9400

v/p o.d

tr fine sand qz - can calc vns

sltst

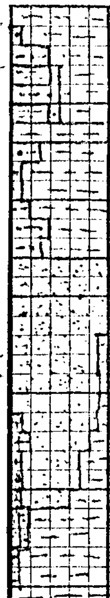
lt-m, sub-ang to sub-rnd, fair srtg; occas sand size qz; v/p calc;
dk gy/brn argil ls or marlstone - gy-n chert in both

9500

KB 8216

ANSCHUTZ #1 FEDERAL-614

9500 - 10,500



9500

mont | sh, sltst, clay | sh-a/a; tr silt; sli marly

Sh & sltst a/a; off-wh clay mineral w/ bronze mica (montmor-
illonite or related?)

3% py, 1%, 5%, 2%, 1% | from 9550 abnd pyrite

color change to battleship gray, then med gray
silty

9600

SS | f to m gr, sub-rd sli frosted, lt gy/tn

oil, oil, oil, b, b | oil in dust gives lt grn fluor — from lube Kelley ?

Gas flare 1½ min after SO for 30 min - then cut on air.

No GT's w/o air-flow on.

9700

py b, b, py b, b, py b, b, py b | fr 9780; angular, m-gr ss w/ bentonitic cement; sli congl

v/p lt brn tsta [?] f-m gr ss - mod well cuts; tight but

gives cut & lt green fluor; v abndt blk sh cavings

from 9780? rd sh, lt gy/grn, lt gy argil ls grds to calcar sh

9800

from 9730: rd, rd/brn, lt grn, bent sh, v/p silty, v/p calcar

abndt blk sh cavings v/p indigenous ? pyrite; tr ss, f gr fria

v/p tn & rd stain; v/p tr rdd frstd gr; v/p bentonitic cmt

tr sltst; from 9770 incr lav to lilac bent, calcar sh, v/p silty

TD 9803 DRL - v/p sltst

9900

10 000

10100

10200

10300

10400

10500

K+E 5 X 5 TO ½ INCH 7 X 10 INCHES 46 0863 KEUFFEL & ESSER CO. MADE IN U.S.A.

7.50
9.5#
17.04

PL

Bob Wakefield · Consultg 8/29/74
Fed 614 — USGS
3 17S 21E

T. D 9803 - Morrow

(1) 35 sks — 9550 - 9700 (Dakota SS)

(2) 35 sks — across bot of intermediate Casing (6101)
6025 - 6125

(3) Cut intermediate
@ 5800
50' in & 50' out of stub

(4) 40 sks 5500 - 5600 — Isolate Castlegate from Mesaverde.

(4) 40 sks — 2150 - 2250 Isolate Wasatch from Greenriver

(5) 30 sks — 450 to 325
across bottom of surface pipe (302)

(6) 5 sks/mouse/~9 lbs

PMB

THE ANSCHUTZ CORPORATION

1110 DENVER CLUB BUILDING
518 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303—573-5665

August 30, 1974

Mr. Gerald R. Daniels
U. S. Geological Survey
8246 Federal Building
Salt Lake City, Utah 84138

Mr. Cleon B. Feight
Utah Division of Oil & Gas Conservation
1588 West North Temple
Salt Lake City, Utah 84116

Re: Anschutz #1 Federal 614
SE SW Sec. 3-17S-21E
Grand County, Utah
Federal Lease U-9614

Gentlemen:

Transmitted herewith in triplicate is the NOTICE OF INTENT TO PULL CASING AND ABANDON (Form 9-331) on the captioned well.

Please return one approved copy to this office so that copies may be provided contributing companies.

Yours very truly,

THE ANSCHUTZ CORPORATION

Robert M. Wakefield
Geologist

RMW:kcw
Enclosure

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER **DRY HOLE**

2. NAME OF OPERATOR
The Anschutz Corporation

3. ADDRESS OF OPERATOR
1110 Denver Club Bldg., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface

SE¼SW¼ Sec. 3 — 698' NSL, 2034' EWL

5. LEASE DESIGNATION AND SERIAL NO.
Federal U-9614

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Federal 614

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
3-17S-21E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
8216 KB 8205 GL

12. COUNTY OR PARISH **Grand**

13. STATE **Utah**

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL XXXXX CASING	X	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	X	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

This well was drilled to a total depth of 9803' inthe Morrison formation. Electric logs were run to total depth. Sidewall cores were taken at selected intervals in the Green River.formation; drill stem tests for water samples were run in the Green River formation. Intermediate 7" casing was set @ 6101' and we propose to shoot off @ 5800' and pull 7" casing above that point. Well to be plugged as follows:

Cement	Depth
5 sx w/marker	Surface
30 sx	250-325' (across base of surface casing @ 302')
40 sx	2150-2250'
40 sx	5500-5600'
40 sx	5750-5850'(across top of 7" casing stub)
35 sx	6025-6125' (across base of 7: casing)
35 sx	9550-9700'

Will pull 7" casing above 5800'.

18. I hereby certify that the foregoing is true and correct

SIGNED Robert M. Wakefield TITLE **Geologist** DATE **8-30-74**

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

PI
PMB

THE ANSCHUTZ CORPORATION

1110 DENVER CLUB BUILDING
518 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303—573-5665

September 13, 1974

Mr. Gerald R. Daniels
U. S. G. S.
8426 Federal Building
Salt Lake City, Utah 84111

Mr. Cleon Feight ✓
State of Utah
1588 West, North Temple
Salt Lake City, Utah 84116

Re: Anschutz #1 Federal 614
SE SW Sec. 3-17S-21E
Grand County, Utah
Federal Lease U-9614

Gentlemen:

Transmitted herewith in triplicate is the SUBSEQUENT REPORT OF ABANDONMENT (Form 9-331) on the captioned well.

Remedial work at the location has not been completed; we will advise when the site is ready for final inspection. ✓

Yours very truly,

THE ANSCHUTZ CORPORATION

Robert M. Wakefield
Geologist

RMW:kcw
Enclosure

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: Utah Federal U-9614

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal 614

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 3-17S-21E

12. COUNTY OR PARISH: Grand

13. STATE: Utah

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER DRY HOLE

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 1110 Denver Club Building, Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface: SE¼SW¼ Sec. 3 — 698' NSL, 2034' EWL

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 8216 KB 8205 GL

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

This well was drilled to a total depth of 9803' in the Morrison formation. No significant shows of oil or gas were encountered, and the well was plugged and abandoned August 31, 1974, with plugs set as follows:

Cement	Depth
5 sx, w/marker	Surface
30 sx	250-325' (across base of surface casing @ 302')
50 sx	860-992' (across top of 7" intermediate casing stub @ 992)
40 sx	2150-2250'
40 sx	5500-5600'
35 sx	6025-6125' (across base of 7" casing)
35 sx	9550-9700'

18. I hereby certify that the foregoing is true and correct

SIGNED Robert M. Wakefield TITLE Geologist DATE 9-13-74

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

THE ANSCHUTZ CORPORATION

1110 DENVER CLUB BUILDING
518 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303--573-5665

PI

September 13, 1974

Mr. Gerald R. Daniels
U. S. Geological Survey
8426 Federal Bldg.
Salt Lake City, Utah 84138

Mr. Cleon B. Feight
Utah Division of Oil and Gas Conservation
1588 West North Temple
Salt Lake City, Utah 84116

Re: Anschutz #1 Federal 614
SE SW Sec. 3-17S-21E
Grand County, Utah
Federal lease U-9614

Gentlemen:

Transmitted herewith in duplicate is the WELL COMPLETION REPORT AND LOG (Form 9-330) on the captioned well.

Yours very truly,

THE ANSCHUTZ CORPORATION

Robert M. Wakefield
Geologist

RMW:kcw
Enc.

Form 9-330
(Rev. 5-63)

14 P1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: Federal U-9614

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal 614

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 3-17S-21E

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: The Anschutz Corporation

3. ADDRESS OF OPERATOR: 1110 Denver Club Bldg., Denver, Co. 80202

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: SE¼SW¼ Sec. 3 — 698' NSL, 2034' WEL
At top prod. interval reported below
At total depth

14. PERMIT NO.: 43-019-30204 — DATE ISSUED: 6-28-74

12. COUNTY OR PARISH: Grand — 13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7-16-74	8-27-74	P&A 8-31-74	8216 KB 8205 GL	------

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9803	-----	----	→	0-9803	---

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: None

25. WAS DIRECTIONAL SURVEY MADE: --

26. TYPE ELECTRIC AND OTHER LOGS RUN: IES-GR sonic (1st run only), Density & CNL (2nd run only)

27. WAS WELL CORED: sidewalls

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8"	32	302	13 3/4"	150 sx	none
7"	20	6101	8 3/4"	150 sx	992'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Robert M. Wakefield TITLE Geologist DATE 9-13-74

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
			Sidewall cores @ 2' intervals between 590-630, 825-850, 940-980. Sidewall cores @ 3' intervals between 1080'-1110, 1680-1720 No hydrocarbons in cores. Drill stem tests for water samples: DST #1 935-975 open 40 min Rec: 1'mud DST #2 1680-1720 open 40 min Rec: 30' sl wc mud DST #3 2070-2100 open 90 min rec: 270' mc water No pressures recorded. There were no conventional cores or drill stem tests

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Green River	Surface	
Wasatch	2109	
Mesaverde	3255	
Buck Tongue	5445	
Castlegate	5620	
Mancos	5910	
Dakota silt	9441	
Dakota shale	9530	
Dakota sand	9645	
Cedar Mtn.	9688	
Morrison	9744	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636

GPO 870-401

THE ANSCHUTZ CORPORATION

1110 DENVER CLUB BUILDING
518 SEVENTEENTH STREET
DENVER, COLORADO 80202
TELEPHONE 303—573-5665

September 30, 1974

Mr. Gerald R. Daniels
U. S. Geological Survey
8426 Federal Building
Salt Lake City, Utah 84111

Mr. Cleon B. Feight
State of Utah
1588 West North Temple
Salt Lake City, Utah 84116

Re: Anschutz #1 Federal 614
SE SW Sec. 3-17S-21E
Grand County, Utah

Gentlemen:

Transmitted herewith are your required number of copies of the following items on the captioned well:

Electric logs
Geological report and well history

Yours very truly,

THE ANSCHUTZ CORPORATION

Robert M. Wakefield
Geologist

RMW:kcw
Enc.

DRILLING HISTORY
AND
GEOLOGIC REPORT

ANSCHUTZ #1 FEDERAL 614 WELL

by

Charles W. Shannon
Geological Engineer

Salt Lake City

September 1974

Charles W. Shannon
Geological Engineer
2186 Blaine Avenue Salt Lake City, Utah 84108 Phone (801) 467-3988

Drilling History of Anschutz #1 Federal 614 Well

Location:	:	SE SW Section 3 - T 17 S - R 21 E, SLM, Grand County, Utah.
Operator	:	The Anschutz Corporation 1110 Denver Club Building Denver, Colorado
Contractor	:	Willard Pease Drilling Company P O Box 548 Grand Junction, Colorado
Elevations	:	Ground 8205; KB 8216
Spud Date	:	17 July 1974
Bottom Date	:	28 August 1974
Total Depth	:	9803 driller; 9804 logger.
July 16	:	Drilled 0 to 187 (187'); 12-1/2" bit; drilling in shale with minor siltstone; drilling with mud; average DR = 4 mpf (15 fph).
July 17	:	Drilled 187 to 302 (115'); drilling in shale; DR 4 to 4.5 mpf; casing TD at 6:10 p.m.; set 302 feet of 9-5/8" casing and cemented. WOC
July 18	:	Drilled 302 to 421 (119'); air compressors in and placed 7:00 p.m.; drilled out cement; BOB at 10:45 p.m.; drilled ahead; 8-3/4" bit; drilling in shale and lesser sandstone; DR 4.3 mpf (12.75 fph).
July 19	:	Drilled 421 to 823 (402'); drilling in Green River formation (shale with scattered interbedded sandstones); DR 3.6 mpf (16.8 fph).
July 20	:	Drilled 823 to 1176 (353'); drilling in Green River shale with sandstone and siltstone; POH at 8:00 a.m. to change to bit #3; BOB with mist at 10:45 a.m.; DR 4+ mpf (14.7 fph).

July 21 : Drilled 1176 to 1690 (514'); drilling in Green River as above; lost returns at 1374, first returns after circulating were bentonite, cement, and silt dust; unloaded copious amount of water; DR 2.8 mpf (21.4 fph).

July 22 : Drilled 1690 to 2114 (424'); drilling in interbedded sand, shale, siltstone and limestone of the Green River formation; changed to chocolate colored shale at 1890, thence apparent formation change at 2100 to shale and sandstone; stopped misting with only water coming up; circulated off bottom at 1820 for 40 minutes, then drilled ahead; DR increased to less than 2 mpf in places; average DR 3.4 mpf (17.5 fph).

July 23 : Drilled 2114 to 2447 (333'); drilling in Wasatch formation, shale and sandy siltstone; POH at 2140 to change to bit #4 at 10:15 a.m.; BOB 2:00 p.m.; down 40 minutes to repair injection pump at 7:00 p.m.; DR 3.1 mpf (19.3 fph).

July 24 : Drilled 2447 to 2815 (368'); drilling in Wasatch shales and siltstone; DR 3.4 mpf (17.4 fph).

July 25 : Drilled 2815 to 3130 (315'); drilling in Wasatch shale and siltstone; DR 3.8 mpf (15.6 fph).

July 26 : Drilled 3130 to 3335 (205'); drilling in Mesa Verde; change from Wasatch at 3340; connection at 3130, ream to bottom; blow to clear hole at each connection to 3192; stuck drill pipe at 3335; work pipe; DR 4.5 mpf (13.3 fph).

July 27 : Drilled 3335 to 3353 (18'); work pipe and mix mud; free pipe and POH at 2:20 p.m.; mix mud; go in hole; circulate at 1700; BOB 5:35 a.m.; drill ahead in Mesa Verde siltstone and shale; DR 8.05 mpf (7.4 fph).

July 28 : Drilled 3353 to 3505 (152'); drilling in Mesa Verde siltstone with some shale; POH at 3447 to change to bit #7; BOB at 1:42 a.m.; DR 7.0 mpf (8.6 fph).

July 29 : Drilled 3305 to 3735 (430'); drilling in Mesa Verde siltstone, shale, and lesser sandstone; DR 3.1 mpf (19.4 fph).

July 30 : Drilled 3735 to 3949 (214'); drilling in Mesa Verde shale and siltstone with some sand; lost circulation at 7:02 a.m. (3949); DR 5.9 mpf (10.1 fph).

July 31 : Drilled 3949 to 4150 (201'); drilling in Mesa Verde sand and shale; WO lost circulation; lost 220 bbls mud; mix mud BOB 11:26 a.m., drill ahead; dump shaker pit at 4139; DR 5.7 mpf (10.6 fph).

August 1 : Drilled 4150 to 4394 (244'); drilling in Mesa Verde sandstone with occasional shale; started to make trip at 4154 (8:35 a.m.), 8 stands tight, took out rotary head and worked on BOP; completed trip at 2:50 p.m.; BOB, drilled ahead; DR 4.1 mpf (14.7 fph).

August 2 : Drilled 4394 to 4671 (277'); drilling in Mesa Verde siltstone and sandstone with lesser shale; clean shaker pit at 4419; DR 4.8 mpf (12.6 fph).

August 3 : Drilled 4671 to 4958 (287'); drilling in Mesa Verde sandstone and shale; dumped shale pit at 4882; DR 4.65 mpf (12.9 fph).

August 4 : Drilled 4958 to 5200 (242'); drilling in Mesa Verde sandstone and shale; dumped shale pit at 5131; POH at 5200 to change bit (6:05 a.m.); DR 5.2 mpf (11.6 fph).

August 5 : Drilled 5200 to 5427 (227'); drilling in Mesa Verde interbedded sandstone and shale; complete going in hole; wash down and ream bottom 20 feet; BOB 12:00 noon; dump shaker pit at 5424; DR 4.8 mpf (12.4 fph).

August 6 : Drilled 5427 to 5636 (209'); drilling in Mesa Verde; Buck Tongue at 5470; dump first section of middle mud pit at 5:00 p.m. (5505); clean suction pit at 9:30 p.m.; DR 6.2 mpf (917 fph).

August 7 : Drilled 5636 to 5747 (111'); drilling in Buck Tongue shale, Castlegate sand; POH at 10:55 a.m. (5648) to change bits; ream 6 feet to bottom; BOB at 5:05 p.m.; DR 9.4 mpf (6.4 fph).

August 8 : Drilled 5747 to 5847 (100'); drilling in Castlegate sand; dumped shale pit at 5785 (3:05 to 3:50 p.m.); lost circulation at 5795; POH 7 stands and mud up (5:45 p.m.); lost 40 to 50 bbls mud; returns up at 7:50 p.m.; BOB at 10:05 p.m.; DR 11 mpf (5.5 fph).

August 9 : Drilled 5847 to 5976 (129'); drilling in Castlegate sand; Mancos shale from 5920; dump shale pit at 5876; DR 10.6 mpf (5.7 fph).

August 10 : Drilled 5976 to 6096 (120'); drilling in Mancos shale; DR 11.8 mpf (5.1 fph).

August 11 : Drilled 6096 to 6100 (4'); POH at 8:45 a.m., 7 stands and circulate to condition hole for logging; go back to bottom, then strap out (11:25 a.m.; out at 2:00 p.m.; pipe tally 6101'; Schlumberger arrived at 3:20 p.m. and rigged up; start in at 3:47 p.m.; IES, GR-Sonic; sidewall cores; out of hole at 2:30 a.m.

August 12 : Ran Lynes DST 940 to 980 for water test; in at 8:00 a.m.; ran 7" casing.

August 13-16 : Ran casing and cemented; landed at 6047; WOC and air.

August 17 : Drilled 6105 to 6412 (307'); drilled out cement; BOB 4:17 p.m.; drilling in Mancos shale; DR 2.45 mpf (41.3 fph).

August 18 : Drilled 6412 to 6850 (438'); drilling in Mancos shale; POH at 9:37 p.m. to change bits; BOB 1:29 a.m. (6664); DR 2.4 mpf (24.6 fph).

August 19 : Drilled 6850 to 7436 (586'); drilling in Mancos shale; DR 2.0 mpf (29.6 fph).

August 20 : Drilled 7436 to 8242 (806;); drilling in Mancos shale; DR 1.3 mpf (45.4 fph).

August 21 : Drilled 8424 to 9021 (779'); drilling in Mancos shale; POH at 9:25 a.m. to change bit; BOB at 3:43 p.m. (8303); gas flare at connection 8521; increased from 5 seconds at start to 66 seconds at 8864 connection, then diminished to 20 seconds at 8950 connection; flares up to half-a-minute each time air is turned on after connection; DR 1.0 mpf (58.6 fph).

3-17s-21E

August 22 : Drilled 9021 to 9574 (553'); drilling in Mancos shale; Dakota silt at 9450; DR 2.2 mpf (27.3 fph).

August 23 : Drilled 9574 to 9687 (112'); POH at 9576 to change bit (8:04 a.m.); clean hole; BOB at 3:15 p.m.; drilled ahead to connection at 9620, then began series of gas checks:

9620: off bottom 30 min with air off NGTS air on, burn 1'30"

9640: off bottom 30 min with air off NGTS air on, burn 1'-30"

9680: off bottom 40 min with air off NGTS air on, burn 1'-48"

BOB drilling ahead to 9687, lost dust; no returns after last gas check; worked tools loose then POH at 10:40 p.m.; Dakota sandstone beds at 9640; POH 42 stands, into 7" casing; DR 2.3 mpf (25.6 fph).

August 24 : No drilling; mis mud; put pilot tube assembly on bluey line with 1/8 inch orifice; weak blow of 2 to 3 psi for 60 minutes = approximately 8000 CFGPD; loaded hole with mud; broke circulation at 10:00 a.m.; POH, bit plugged with LCM circulate to 1:25 p.m., then run in 15 stands at a time.

August 25 : Drilled 9687 to 9708 (21'); drilling out bridges in Mancos going into hole; heavy shale cavings prevent getting to bottom; BOB 11:58 p.m.; drill ahead in Dakota sandstone; clutch out, 6:05 a.m.; pull off bottom and work on clutch; DR 17.5 mpf (3.4 fph).

August 26 : 9708 to 9746 (38'); repair clutch and continue OH; change to bit #16; BOB 5:45 p.m.; drilling in Dakota sandstone and lesser shale; small amount of gas in mud; heavy shale cavings; DR 21.9 mpf (2.7 fph).

August 27 : Drilled 9746 to 9790 (44'); drilling in slightly bentonitic sandstone and shale; very heavy Mancos shale cavings; POH at 9777 (9:00 p.m.) to change to bit #17; BOB 3:35 a.m.; DR 22.1 mpf (3.6 fph).

August 28 : Drilled 9790 to 0903 (13'); drilling in Morrison (?) shale; TD at 12:25 p.m.; circulate and clean hole for logging; POH 3:55 p.m.; out at 7:30 p.m.; Schlumberger rig up; logged from 8:00 p.m.; IES CNF, FDL; TD driller 9803, logger 9804; logging tools OH at 3:30 a.m.; ran in Lynes tester to 6000; WOO.

August 29 : Pulled DST tools out of hole; WOO until 5:30 p.m.; begin to POH in preparation for D & A.

Bit Record

1.	Reed	12-1/4"	Y11J out at	302	23 hour run
2.	HTC	8-3/4	OWVJ	833	32
3.	STC	"	F 5	1307	64-1/4
4.	HTC	"	J 55	3130	62-1/4
5.	STC	"	F 5	3335	15
6.	HTC	"	OWV	3447	14-1/2
7.	HTC	"	J 55	4154	72-1/2
8.	Reed	"	FP 53	5200	86-3/4
9.	HTC	"	J 44	5648	44
10.	STC	"	5 JS	6105	80-1/2
11.	HTC	6-1/8	W 7	6664	27-3/4
12.	Reed	"	F 72	8303	51-1/2
13.	STC	"	F 5	9576	37-1/2
14.	STC	"	F 5	9687	7 (drilled bridges)
15.	STC	"	W 4	9708	6
16.	HTC	"	J 33	9777	27-1/2
17.	HTC	"	W 7	9803	TD

Deviation Surveys

Depth	Degrees	Depth	Degrees
60	3/4 (?)	3700	3/4
120	1/4	3870	3/4
205	1/4	4070	1/2
290	1/2	4460	miss
410	3/4	4840	3/4
504	3/4	5180	3/4
606	1/2	5560	1-3/4
700	3/4	5640	1-3/4
800	3/4	5745	1-3/4
900	3/4	5930	1-3/4
1000	3/4	6090	1-1/2
1100	1	6250	1-1/2
1200	3/4	6415	1-3/4
1300	3/4	6610	1-1/4
1400	3/4	6845	1-3/4
1570	1/2	7090	2
1700	1/4	7370	2-1/2
1870	1/4	7590	2
2000	1/4	7775	2
2120	0	7890	2
2280	0	8110	2
2500	1/4	8450	1-3/4
2650	1/4	8725	1-1/2
2840	1/4	9570	2
3150	1/4		

Logging and Sidewall Coring

Schlumberger services:

Run No. 1: 11 August 1974; 303 to 6095.
IES; GR-Compensated Sonic with Caliper

Run No. 2: 28 August 1974;
IES - 6105 to 9804
CN/FD - 8268 to 9800
FDL - 8284 to 9800

Sidewall Cores:

590 thru 630; 2' intervals
826 thru 848; 2' intervals
944 thru 978; 2' "
1083 thru 1109; 3' " (missed 1106)
1681 thru 1717; 3' " (missed 1687, 108 & 1711)

Charles W. Shannon
Geological Engineer
2186 Blaine Avenue Salt Lake City, Utah 84108 Phone (801) 467-3988

Geologic Report
on
Anschutz #1 Federal 614 Well

General.

Regionally, the subject well is located along the southern margin of the Uintah Basin, where both the structure and deposition of sedimentary strata has been influenced by the northwestward plunging terminus of the Uncompahgre Uplift. Natural gas accumulations have been found in lenticular sands developed within Cretaceous and Jurassic sediments where these strata exhibit local flexures and faults. Although it cannot be stated axiomatically, it does seem characteristic that accumulation is most frequently found in favorably developed sands superposed on the flanks or crest of such flexures. The structures indigenous to these rather deeply buried objective strata are seldom reflected at the surface.

Stratigraphy.

A graphic log appended to this report shows in detail the lithology of the strata penetrated by the well bore. Rocks exposed at the surface consist of shales and sands of the Green River formation. The formation tops presented below are picked from electric logs. Tops picked on the basis of observed well cuttings are in reasonably close agreement, but it should be pointed out that lithologic criteria do not afford a pick as clear-cut as that based on recognized electric log characteristics.

Formation	Depth to Top	Datum	Thickness
Green River	Surface	8216 KB	~~X~~2108 ← Typo?
Wasatch	2108	6108	1142
Mesa Verde	3250	4966	2195
Buck Tongue Mbr	5445	2771	175
Castlegate Mbr	5620	2596	290
Mancos	5910	2306	3528
Dakota Silt	9438	-1222	92
Dakota	9530	-1314	180)
Morrison (?)	9710	-1494	+ 94) *
TD	9804	1588	

* (Note alternative interpretation in following paragraphs.)

Thickness of the several formations was about as expected, but datum of tops was 170 to 190 feet higher than prognosticated.

No asphaltic sands were noted in the cuttings of the Green River section. Several zones of porosity as indicated by density logging were cored. A listing of these core intervals is appended hereto. Most of the cores showed the sections to be composed of very fine grained silty to shaley sandstone with no apparent hydrocarbon content. In the lower part of the Green River, an occasional thin stringer of oil shale was noted, but none were deemed potentially economic.

The Castlegate member at the top of the Mancos shale contains a 60 foot section of fine to medium grained sandstone which is moderately friable but for the most part has a silty matrix. On the electric log, this zone shows very little porosity. There was no discernable oil in the cuttings. This sand has identical counterparts in the Mesa Verde section above, but those do not exhibit the distinctive electric log character of the Castlegate.

The Mancos shale section is typical throughout its extent. A gas zone was found at about 8520, some 2600 feet into the formation. As noted in the Well History section, this gas would produce a flare of short duration after the air had been turned on following each connection. The gas did not surface during drilling.

The top of the Dakota silt member, as determined from the electric log, is at 9438. This agrees within 12 feet with the sample top. The top of the Dakota proper is 9530. Except for thin siltstone beds, the latter section is composed of dark grey micaceous shale very similar to that of the Mancos. At 9645, a well developed light grey, medium grained sandstone occurs. This is moderately well indurated; has a bentonitic cement, and exhibits but little porosity. The top 30 feet of samples did give a slight cut with chlorothene and fluoresced a light green. Some 38 feet of this sand is present, separated from an underlying 10 foot bed by a thin shale stringer. The lower sand is water saturated.

It was necessary to mud up at 9687 as the influx of water precluded further drilling with air. In going back into the hole, it was found that the Mancos shale section had bridged over in numerous places. Although the hole was cleaned upon resumption of drilling, copius cavings from the Mancos persisted. Samples from 9687 were largely composed of large Mancos shale fragments and it was extremely difficult to identify which of the other constituents of the samples were diagnostic of the formation being cut. Both electric log and sample picks show the base of the lower sand to be at 9710. From 9730, red, red/brown, light green bentonitic, and variegated shale cuttings occurred although the bulk of each sample consisted of Mancos cavings. On the basis of the observed lithology of these minor components, the section was concluded to be

Morrison. However, the results of the subsequent electric and nuclear logging cast doubt upon the accuracy of the lithologic picks.

If reference is made to the accompanying Meadow Creek Prospect map, it will be noted that the subject well is in close proximity to the three Segundo Canyon wells drilled in the early 1960's by Pacific Natural Gas Company. The position of #614 well with respect to the structure delineated by contours on the top, the Dakota is not altered by the obtained well data. Structurally, the well lies approximately midway between Segundo #1 and #23-4. The following table illustrates the relationship of tops as correlated between the pertinent electric logs:

PGN #1				#614				PGN #23-4		
8341 Elev		Thk		KB. 8216 Elev		Thk		8147 Elev		Thk
5914	2427		Km	5910	2306			5995	2152	
--			Kds	9438	-1222		92	9550	-1403	90
9410	-1069	120	Kd	9530	-1314		113	9640	-1493	100
9530	-1189	126	Kcm	9643	-1427		112	9740	-1593	56
9656	-1315		Jm	9755	-1539			9796	-1649	

With the exception of the notably lesser thickneww of the Cedar Mountain in #23-4, a credible correlation evolves from these picks. If this is a correct interpretation, the sandstone at 9643 in #614 well occurs in the Cedar Mountain member. This would mean that the Dakota proper is composed entirely of shale. Assuming the tops to be correct, the sand of #614 correlates with the zone 9740 - 9795 in #23-4 and 9806 - 9820 in #2. Not having a log of #1 available, it is not known if a similar correlation exists with that well. Admittedly, the above correlation is subject to question. If the sand of #614 is placed at the base of the Dakota, the top of the Morrison would be

at 9755 on the basis of the character of the induction curve. As stated before, the meager cuttings found amidst the abundance of Mancos cavings in the samples of this critical portion of the hole are thought to be of Morrison character. In any event, the bottom 104 feet is composed entirely of shale.

Inspection of the logs from this group of wells illustrates the lenticular nature of the sands under consideration, and the degree of latitude with which correlations can be made. As the history of the area demonstrates, the relative position of sands within this portion of the column is subordinate to their reservoir characteristics with respect to their potential for containing producible hydrocarbons.

From observations afforded during the drilling, it is concluded that the gas and oil noted after mudding up and drilling ahead comes from the top of the sand at 9643. The thin sand at the base certainly is water saturated and it is somewhat intuitively reasoned that the very thin intervening shale stringer could not prove an effective barrier against ingress of water into the overlying sand were the latter to be produced.

Respectfully submitted,

Charles W Shannon

Charles W. Shannon
Geological Engineer